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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,111

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Johan Dahlberg

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EXAMINER

TROY, DANIEL J

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,111	<b>Applicant(s)</b> DAHLBERG, JOHAN	
	<b>Examiner</b> DANIEL J. TROY	<b>Art Unit</b> 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/8/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 1 is objected to because of the following informalities: line two reads "in that he charge comprises one". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1-20, the applicant merely discloses the method of calculating the average of two numbers for determining the e-dimension. The current disclose does not enable one of ordinary skill in the art to select distances between perforations relative to the type of propellant.

Regarding claims 2 and 3, the spec does not provide support for the tube being "in the charge".

Regarding claim 7, the specification does not provide support for the tubes being both "inside one another" AND "directly after one another".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 9, the use of the pronoun "it" is indefinite because it is unclear which noun it is referring to.

Regarding claim 10, the statement "previously disclosed, per se" is indefinite.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte*

*Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation “comprises one”, and the claim also recites “preferably at least two” which is the narrower statement of the range/limitation. In the present instance, claims 6 recites the broad recitation “each modular charge”, and the claim also recites “at least two highly perforated propellant tubes” which is the narrower statement of the range/limitation.

Claims 1-20 provide for the production of tubular propellant charges, but, since the claims do not set forth any clear active steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. For example the examiner notes that it is unclear whether the surface treatment is provided to an already perforated tube or does the method include perforating the tube?

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected as best understood under 35 U.S.C. 103(a) as being unpatentable over Maxim (US Patent Number 694295) in view of Leeper (US Patent Number 3256819).

Regarding claim 1, Maxim discloses, a method for producing tubular propellant charges with a very high charge density and high progressivity (line 47), characterized in that the charge comprises at least two propellant tubes (figure 2 or 3) which have circular outer and inner boundary surfaces and which are radially perforated in their entirety with combustion or ignition channels (3) at an e-dimension distance selected in relation to the actual type of propellant and its desired combustion characteristics ("to provide for suitable burning thicknesses between the perforations to secure the simultaneous completion of the combustion throughout the mass of the explosive" lines 37-42), but lacks at least one of the total number of outer surfaces of these propellant tubes that are available for initiation has been treated with an inhibition, surface treatment or surface coating that delays the propagation of ignition to this surface, so that combustion of the propellant tubes is partially mutually overlapping.

Leeper teaches that it is known in the art to treat propellant surface with an inhibitor (23). The use of an inhibitor allows for even and controlled burning of the propellant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Maxim, by using an inhibitor similar to that disclosed by Leeper, to allow for even and controlled burning of the propellant.

Regarding claim 2, Maxim discloses, at least two of the perforated propellant tubes included in the charge have been arranged one after the other (figure 2 or 3).

Regarding claim 3, Maxim discloses, the propellant tubes included in the charge, at least one is arranged inside the internal cavity of an outer propellant tube.

Regarding claim 4, Leeper teaches, each propellant tube intended to be entirely ignited by propagation ("capable of complete consumption" C2 L 22) has been inhibited (23 and 35) with a substance intended to delay propagation.

Regarding claim 5, Leeper teaches, that only limited declines in the jointly increasingly generation of propellant gas by the entire charge occur during total combustion because it is stated that "the propellant structure will be slightly progressive meaning the burning surface area will increase with burning time" (C3 L69-73).

Regarding claim 6, Maxim discloses, a propellant unit charges (figure 7 or 8) encapsulated in a means of protection against wear and tear ("inclosing case" page 2 line 100) in such a way that they are capable of being combined in an optional number to form charges with the desired energy content, where each such part propellant charge exhibits a central ignition channel (page 2 line 120) to facilitate the propagation of ignition between all part charges combined together to form a unit, but lacks the outer surface tube being inhibited

Leeper teaches that it is known in the art to treat propellant surface with an inhibitor (35). The use of an inhibitor allows for even and controlled burning of the propellant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Maxim, by using an inhibitor similar to that disclosed by Leeper, to allow for even and controlled burning of the propellant. Further the examiner notes that it is inherent that the inhibitor has a different rate of

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combustion that the propellant because this is a main purpose of an inhibitor which are well known and widely used in the art.

Regarding claims 7, 8, and 10, Maxim in view of Leeper teaches, a propellant charge for barrel weapons having circular outer cross section and a very high charge density and high progressivity as explained above. The examiner notes the structure of the method claims 1-6 are inherent because it is the normal and logical structure that would be used in the invention.

Regarding claim 9, Leeper teaches, layers of a propellant for delaying the propagation of arranged between different propellant tubes ("variable mass burning rate" C2 L18-29). Further the examiner notes that inhibitor, as explained above, could be considered a propellant for delaying propagation for ignition.

Regarding claim 11, Maxim discloses, different tubes perforated at different distances (page 1 lines 37-45), but lacks the different propellants with different rates of combustion.

Leeper teaches that it is know in the art to use different rates of combustion. The use of different rates of combustion rates allows one to vary the trajectory of a projectile.

Therefore it would be obvious to one having ordinary skill in the art to combine the different rates of combustion as taught by Leeper with Maxim's invention to allow one to vary the trajectory of a projectile used with the propellant.

Regarding claim 12, Maxim in view of Leeper teaches, different rates of combustion can be used to give a loner combustion time as explained above.



Regarding claim 13, Maxim discloses, an inner cavity of the innermost propellant tube of the charge has been adapted to accommodate a fuse (32) for initiation of the charge. The examiner notes that having the fuse consist of loose granular propellant is obvious and well known in the art.

Regarding claims 14-20, Maxim in view of Leeper teaches, the method as previously described.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL J. TROY whose telephone number is (571)270-3742. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (571) 272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DJT/

/Michael J. Carone/  
Supervisory Patent Examiner,  
Art Unit 3641